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EXAMINER

YODER III, CHRISS S

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PAPER NUMBER

2622

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 09/654,263	<b>Applicant(s)</b> HYODO ET AL.	
	<b>Examiner</b> Chriss S. Yoder, III	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5, 6, 8-13, 15-18 and 31-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 8-13, 15-18 and 31-58 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 19, 2006 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 43-44 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 43 recites the limitation "recording device records *the* information indicating" in line 2. There is insufficient antecedent basis for this limitation in the claim. The Examiner believes the limitation should read, "recording device records information indicating", and will be examined as understood by the Examiner.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-2, 31, 33, 39-42, and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by McCarthy et al. (US Patent # 6,335,983).
2. In regard to claim 1, note McCarthy discloses the use of the use of an imaging device which images a subject so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range on at least one of displaying and printing (column 2, lines 28-33 and column 4, lines 9-35) and a recording device which records an information indicating that the acquired image data is imaged with the acquiring imaging luminance range that is wider than the reproducing luminance range along with the image data acquired by the imaging device (column 6, line 64 - column 7, line 9).
3. In regard to claim 2, note McCarthy discloses that the acquiring imaging luminance range is at least two and at most six times as wide as the reproducing luminance range (column 2, lines 28-33, depending on the application, the luminance range varies with each device).

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4. In regard to claim 31, note McCarthy disclose the use of an electronic image recording and reproducing system, comprising an imaging device which images a subject so as to acquire first imaged data with an acquiring luminance range wider than a reproducing luminance range on at least one of displaying and printing (column 2, lines 28-33 and column 4, lines 9-35), a recording device which records the first imaged data acquired by the imaging device and luminance range information indicating that the acquiring luminance range is wider than the reproducing luminance range (column 6, line 64 - column 7, line 9), a reading device which reads the first image data with the acquiring luminance range and reads the luminance range information (column 8, lines 46-53), a signal processing device which produces, from the first image data with the recording luminance range, second image data with a luminance range required for reproducing according to the luminance range information (column 8, lines 46-53), and a reproducing device comprising at least one of a displaying device which displays the second image data as a visible image and a printer which prints the second image data as the visible image (column 8, lines 46-53).

5. In regard to claim 33, note the primary reference of McCarthy discloses that the recording device converts the image data acquired by the imaging device with a predetermined function and records the converted image data and information on the predetermined function (column 7, lines 1-10).

6. In regard to claim 39, note McCarthy discloses that the recording device records the information indicating that the acquired image data is imaged with the acquiring

imaging luminance range that is wider than the reproducing luminance range separately from the image data (column 7, lines 57-63).

7. In regard to claim 40, note McCarthy discloses that the recording device records the information indicating that the acquired image data is imaged with the acquiring imaging luminance range that is wider than the reproducing luminance range in a same file as the image data (column 7, lines 57-63).

8. In regard to claim 41, note McCarthy discloses that the recording device records the luminance range information separately from the second image data (column 7, lines 57-63).

9. In regard to claim 42, note McCarthy discloses that the recording device records the luminance range information in the same file as the second image data (column 7, lines 57-63).

10. In regard to claim 47, note McCarthy discloses that the imaging device acquires the first image data by converting initially imaged data with a gradation conversion function (column 7, lines 22-29), wherein the recording device records information specifying the gradation conversion function along with the second image data (column 7, lines 47-60), and wherein the signal processing device produces the second image data also based on the recorded gradation conversion function (column 8, lines 46-60).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Tsai (US Patent # 5,309,243).

12. In regard to claim 3, note the primary reference of Rahman in view of Sezan discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 1 above. Therefore, it can be seen that the primary reference of Rahman in view of Sezan fails to disclose a lower than normal exposure value for a desired reproducing. Tsai discloses the use of an imaging device that images a subject with lower than normal exposure values (column 2, lines 30-36). Tsai teaches that the adjustment of the image exposure values is preferred in order to compensate the image for better quality. Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to image the subject with a lower than normal exposure value as suggested by Tsai.

13. Claims 5, 8, 10, 11 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Kim (US Patent # 5,710,594).

14. In regard to claim 10, note McCarthy discloses the that the recording device records information that represents a relationship between the image data and digital values of the converted image data to be recorded the predetermined function and

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records at least a first coefficient of the function (column 7, lines 30-36). Therefore, it can be seen that McCarthy fails to disclose the use of a recording device that represents a relationship between the image data and a digital value to be recorded while dividing the relationship into an area where the relationship is represented by a logarithmic function and an area where the relationship is represented by a linear function, and records a coefficient of the logarithmic function and a coefficient of the linear function with the image data. Kim discloses the use of a relationship having an area that is represented by a logarithmic function and an area that is represented by a linear function (column 1, lines 53-57 and column 6, lines 19-21, both the linear and logarithmic functions are used; and using the function of Kim, the gamma correction coefficient that is stored in McCarthy is considered to be the equivalent of the coefficients used in the correction function of Kim). Kim teaches that the use of both linear and logarithmic functions is preferred in order to be compatible with several types of image signal processing systems (column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a linear and a logarithmic function to represent the relation between the image data and the data to be recorded as suggested by Kim.

15. In regard to claim 11, note McCarthy discloses that the recording device records the coefficients as attached information for the image data in the same image file as the image data (column 7, line 60- column 8, line 9).

16. In regard to claim 34, note McCarthy discloses the that the recording device records information that represents a relationship between the image data and digital

values of the converted image data to be recorded the predetermined function and records at least a first coefficient of the function (column 7, lines 30-36). Therefore, it can be seen that McCarthy fails to explicitly disclose that the predetermined function is a linear function. Kim discloses the use of a linear function for correction (column 1, lines 53-56; and figure 1: 14; using the function of Kim, the gamma correction coefficient that is stored in McCarthy is considered to be the equivalent of the first-order coefficient used in the correction function of Kim). Kim teaches that the use of a linear function is preferred in order to be compatible with several types of image signal processing systems (column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art to modify the McCarthy device to include the use of a linear function to represent the relation between the image data and the data to be recorded as suggested by Kim.

17. In regard to claim 5, note McCarthy discloses that the recording device records the coefficient as attached information for the converted image data in the same image file as the converted image data (column 7, line 60- column 8, line 9).

18. In regard to claim 35, note McCarthy discloses the that the recording device records information that represents a relationship between the image data and digital values of the converted image data to be recorded the predetermined function and records at least a first coefficient of the function (column 7, lines 30-36). Therefore, it can be seen that the primary reference fails to disclose the use of a recording device using a logarithmic function to represent the relation between the image data and a digital value to be recorded. Kim discloses the use of a logarithmic function for

correction (column 1, lines 53-56; and figure 1: 16; using the function of Kim, the gamma correction coefficient that is stored in McCarthy is considered to be the equivalent of the first-order coefficient used in the correction function of Kim). Kim teaches that the use of a logarithmic function is preferred in order to be compatible with several types of image signal processing systems (column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art to modify the McCarthy to include the use of a logarithmic function to represent the relation between the image data and the data to be recorded as suggested by Kim.

19. In regard to claim 8, note McCarthy discloses that the recording device records the coefficient as attached information for the image data in the same image file as the image data (column 7, line 60- column 8, line 9).

20. Claims 6, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Kim (US Patent # 5,710,594) and further in view of Yamagami (US Patent # 6,522,830).

21. In regard to claim 6, note the primary reference of McCarthy in view of Kim discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 5 above. Therefore, it can be seen that the primary reference fails to disclose the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode. Yamagami discloses the use of a recording device that records the image data acquired by the imaging

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device into a directory or folder corresponding to the mode (column 11, lines 50-55).

Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode as suggested by Yamagami.

22. In regard to claim 9, note the primary reference of McCarthy in view of Kim discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 8 above. Therefore, it can be seen that the primary reference fails to disclose the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode. Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a recording device that

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records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode as suggested by Yamagami.

23. In regard to claim 12, note the primary reference of McCarthy in view of Kim discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 11 above. Therefore, it can be seen that the primary reference fails to disclose the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode. Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the conversion mode as suggested by Yamagami.

24. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Bayer (US Patent # 3,971,065).

25. In regard to claim 13, note McCarthy discloses the use of a digital camera that captures the image and converts the output voltage values into digital values and

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records the digital values (column 4, lines 38-49). Therefore, it can be seen that the primary reference of McCarthy fails to disclose that the image is picked up using a CCD having a filter arrangement of R, G, B and G. Bayer discloses the use of a CCD having a filter arrangement of R, G, B and G (column 4, lines 50-67, column 5, lines 54-60, and figure 6). Bayer teaches that the use of a CCD having a filter arrangement of R, G, B and G is preferred in order to capture an image with luminance detail to which the human eye is most responsive (column 5, lines 60-67). Therefore, it would have been obvious to one of ordinary skill in the art to modify the McCarthy device to include the use of a filter arrangement of R, G, B and G as suggested by Bayer.

26. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Horiuchi (US Patent # 6,801,248).

27. In regard to claim 15, note McCarthy discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 1 above. Therefore, it can be seen that McCarthy fails to disclose a mode switching device which switches between a normal imaging mode and a wide luminance range imaging mode. Horiuchi discloses the use of a mode selecting device that switches between different modes (column 6, lines 4-17). It is well known that the use of a mode selecting device is preferred in order to allow the user to select a desired mode. Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a mode selector as suggested by Horiuchi.

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28. In regard to claim 16, note Horiuchi discloses that the subject is imaged with a normal exposure value obtained from normal photometry in the normal imaging mode (column 5, lines 49-51 and column 6, lines 11-20) and the subject is imaged with an exposure value lower than the normal exposure value in the wide luminance range imaging mode, the exposure value being calculated based on the normal exposure value obtained by the normal photometry (column 7, lines 11-31).

29. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Nakagawa et al. (US Patent # 6,738,092).

30. In regard to claim 17, note McCarthy discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 1 above. Therefore, it can be seen that McCarthy fails to disclose that the recording device records the image data with substantially the same luminance range as the reproducing luminance range and records the image data with the acquiring imaging luminance range that is wider than the reproducing luminance range at one time. Nakagawa discloses the use of a recording device that stores two images of different quality at the same time (figure 5: original and either of the thumbnail or the jpeg image; this is the functional equivalent of the recording images of different luminance values). It is well known in the art to store a processed image along with an original image in order to provide a user with an unprocessed image for future image processing. Therefore, it would have been obvious

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to one of ordinary skill in the art to modify the McCarthy device to include the use of a recording device that records high quality images as well as low quality images as suggested by Nakagawa.

31. In regard to claim 18, note McCarthy discloses the use of an imaging device that images the subject with an exposure value of a case in which the subject is imaged with the imaging luminance range that is wider than the reproducing luminance range (column 2, lines 28-33 and column 4, lines 9-35) and the recording device converts the image data acquired by the imaging device with the exposure value so that the luminance range of the image data is substantially the same as the reproducing luminance range (column 5, lines 22-30).

32. Claims 32 and 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983).

33. In regard to claim 32, note McCarthy discloses an imaging device which images a subject so as to acquire image data with an acquiring imaging luminance range wider than a reproducing luminance range on at least one of displaying and printing, as recited in claim 1 above. Therefore, it can be seen that the McCarthy device fails to record an information indicating maximum reflectance set in the camera. However, McCarthy does disclose the use of file formats that support the storage of additional information through the use of tags or meta-data. Official Notice is taken that the concepts and advantages of the storage of information indicating the maximum reflectance are notoriously well known and expected in the art. Therefore, it would have

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been obvious to one of ordinary skill in the art to modify the McCarthy device to include the storage of information indicating the maximum reflectance in order to provide detailed information about the captured image to a processing device so that proper image editing can be performed.

34. In regard to claims 48-49, note McCarthy discloses the use of an electronic image recording and reproducing system as recited in claim 47 above. Therefore, it can be seen that McCarthy fails to disclose that the recording device records information specifying the exposure value used to image the subject, that wherein the signal processing device produces the second image data also based on the exposure value, and that the gradation conversion function used by the imaging device is based on the exposure value used to subject the image. However, McCarthy does disclose the use of image tags/meta-data to store the conversion functions (column 7, lines 57-63) as well as the use of exposure to correct the image data (column 8, lines 54-62). Official Notice is taken that the concepts and advantages of using image tags/meta-data to store exposure values are notoriously well known and expected in the art. Therefore, it would have been obvious to modify the McCarthy device to include the storage of exposure value within the image tags/meta-data in order to provide image capture parameters along with the image for future image processing.

35. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCarthy et al. (US Patent # 6,335,983) in view of Horiuchi (US Patent # 6,825,884) and further in view of Yamagami (US Patent # 6,522,830).

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36. In regard to claim 36, note the primary reference of McCarthy in view of Horiuchi discloses an imaging device which images a subject so as to acquire image data with an imaging luminance range wider than a reproducing luminance range as claimed in claim 15 above. Therefore, it can be seen that the primary reference fails to disclose the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode. Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode as suggested by Yamagami.

37. Claims 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi (US Patent # 6,801,248) in view of Yamagami (US Patent # 6,522,830).

38. In regard to claim 37, note Horiuchi discloses an electronic camera for recording image data obtained by imaging a subject, comprising an imaging device having a normal imaging mode in which the subject is imaged with a normal luminance range and having a wide luminance range imaging mode in which the subject is imaged with a

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wide imaging luminance range wider than the normal luminance (column 6, line 11-column 7, line 37), the imaging device for imaging the subject according to at least one of the normal imaging mode and the wide luminance imaging mode (column 6, lines 11-17), and a recording device for recording the image data acquired by the imaging device (column 5, lines 60-67). Therefore, it can be seen that Horiuchi fails to disclose that the normal luminance range is the range required in reproducing or printing or both, and that the images are stored in a directory or a folder corresponding to one of the normal imaging mode and the wide luminance imaging mode. Official Notice is taken that the concepts and advantages of using a normal luminance range of a camera within the range required for display or printing are well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to modify the Horiuchi device so that the normal luminance range of the camera is within the range required for display or printing in order to reduce processing time by providing an image that required no processing/editing prior to output. Yamagami discloses the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode (column 11, lines 50-55). Yamagami teaches that the use of a recording device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode is preferred in order to distinguish the types of image without changing the filenames (column 11, lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Horiuchi device to include the use of a recording

device that records the image data acquired by the imaging device into a directory or folder corresponding to the imaging mode as suggested by Yamagami.

39. In regard to claim 38, note Horiuchi discloses the use of a mode switching device that switches between two modes (column 6, lines 6-15).

40. In regard to claim 45, note Horiuchi discloses that when the electronic camera is in the wide luminance range imaging mode, the imaging device images the subject in both the normal luminance range and the wide imaging luminance range (column 6, line 11- column 7, line 37; by capturing the wide luminance range image, the normal luminance range is encompassed within the wide luminance).

41. In regard to claim 46, note Horiuchi discloses that when the electronic camera is in the wide luminance range imaging mode, the recording device records the image data of the imaged subject with the normal luminance range and records the image data of the imaged subject with the wide imaging luminance range (column 5, lines 60-67; by recording the wide luminance range image, the normal luminance range is encompassed within the wide luminance).

42. Claims 43-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi (US Patent # 6,801,248) in view of Yamagami (US Patent # 6,522,830), and further in view of McCarthy et al. (US Patent # 6,335,983).

43. In regard to claim 43, note the primary reference of Horiuchi in view of Yamagami discloses the use of an electronic camera for recording image data obtained by imaging a subject, as recited in claim 37 above. Therefore, it can be seen that the primary

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reference of Horiuchi in view of Yamagami fails to disclose that recording device records information indicating whether the subject is imaged in the normal luminance mode or imaged in the wide luminance range imaging mode, and wherein the information is recorded separately from the image data. McCarthy discloses the use of an electronic camera having a recording device that records information indicating a luminance range of the image, and wherein the information is recorded separately from the image data (column 7, lines 57-63). McCarthy teaches that the use of a recording device that records information indicating a luminance range of the image and having the information recorded separately from the image data is preferred in order to reconstruct the original image from a compressed image (column 7, line 64-column 8, line 65). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device of Horiuchi in view of Yamagami to include the use a recording device that records information indicating a luminance range of the image and having the information recorded separately from the image data in order to reconstruct the original image from a compressed image as suggested by McCarthy.

44. In regard to claim 44, note McCarthy discloses that the recording device records the information indicating whether the subject is imaged in the normal luminance mode or imaged in the wide luminance range imaging mode in the same file as the image data (column 7, lines 57-63).

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45. Claims 50-55 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi (US Patent # 6,801,248) in view of McCarthy et al. (US Patent # 6,335,983).

46. In regard to claim 50, note Horiuchi discloses the use of an electronic camera, comprising an imaging device configured to image a subject in a luminance mode to generate raw image data (column 6, lines 11-17), wherein the luminance mode is one of at least a first luminance mode and a second luminance mode, wherein in the first luminance mode, the imaging device images the subject in a first luminance range, and wherein in the second luminance mode, the imaging device images the subject in a second luminance range different than the first luminance range (column 6, lines 11-17), a processing device configured to generate converted image data by processing the raw image data based on the luminance mode of the raw image data (column 7, lines 24-57, the image is processed according to the wide dynamic range mode), and a recording device configured to record the converted image data in a storage area (column 5, lines 63-65, column 7, lines 8-11 and column 7, lines 55-58). Therefore, it can be seen that Horiuchi fails to disclose that the luminance mode of the raw image data is recorded in the storage area separately from the converted image data.

McCarthy discloses the storage of the luminance mode of the raw image data in the storage area separately from the converted image data (column 7, lines 57-63).

McCarthy teaches that the storage of the luminance mode of the raw image data in the storage area separately from the converted image data is preferred in order to reconstruct the original image from a compressed image (column 7, line 64-column 8,

line 65). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Horiuchi device to include the storage of the luminance mode in the storage area separately from the converted image in order to reconstruct the original image from a compressed image, as suggested by McCarthy

47. In regard to claim 51, note McCarthy discloses that the recording device records the converted image data and the luminance mode of the raw image data in a same file as the converted image data (column 7, lines 57-63).

48. In regard to claim 52, note Horiuchi discloses the use of two different luminance ranges (column 6, lines 11-17), and McCarthy discloses the use of a luminance range that is wider than a luminance range of an image reproducing device (column 2, lines 28-33 and column 4, lines 9-35).

49. In regard to claim 53, note both Horiuchi and McCarthy disclose the use of a gradation conversion device configured to convert the raw image data to the converted image data based on a gradation conversion function (Horiuchi: column 7, lines 12-57; McCarthy: column 5, lines 53-63), and McCarthy discloses that the recording device is configured to record the gradation recording function in the storage area in a same file as the converted image data (column 7, lines 47-63).

50. In regard to claim 54, note Horiuchi discloses the use of two different luminance ranges, one being wider than the other (column 6, lines 11-17), and McCarthy discloses a gradation conversion device configured to convert the raw image data to the converted image data based on the gradation conversion function when the image is captured with a wide luminance range (column 5, lines 23-30).

51. In regard to claim 55, note McCarthy discloses that the gradation conversion function is a relationship between digital values of the converted image data and reflectance values of the imaged subject (column 5, line 64- column 6, line 6).

52. In regard to claim 58, note Horiuchi discloses that the imaging device is configured to image the subject with one of a plurality of exposure values (column 7, lines 24-30), wherein the gradation conversion device is configured to use the gradation conversion function from a plurality of gradation conversion functions based on the particular exposure value used by the imaging device (column 7, lines 45-58), and McCarthy discloses the storage of parameters that are used to convert the image in the same file as the converted image data so that the image can be properly reconstructed later (column 7, line 47- column 8, line 9 ; storing the exposure value used by Horiuchi to process the image in order to properly reconstruct the original image from the converted image). The Examiner also notes that the phrase "configured to" is considered to be intended use, and as such, broadens the scope of the claim. If a limitation is written with "configured to..." language, a reference is deemed to meet that limitation if the reference discusses the same element that, although not actually performing the claimed function, is structurally capable of performing it.

53. Claims 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi (US Patent # 6,801,248) in view of McCarthy et al. (US Patent # 6,335,983), and further in view of Kim (US Patent # 5,710,594).

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54. In regard to claim 56, note the primary reference of Horiuchi in view of McCarthy discloses the use of an electronic camera, comprising an imaging device configured to image a subject in a luminance mode to generate raw image data, as recited in claim 55 above. Therefore, it can be seen that the primary reference fails to explicitly disclose that the relationship between the digital values of the converted image data and the reflectance values of the imaged subject includes a linear relationship, a logarithmic relationship, or both. Kim discloses the use of a gradation function having an input/output relationship that is either linear, logarithmic, or both (column 1, lines 53-56; and figure 1: 14 or 16). Kim teaches that the use of a gradation function having an input/output relationship that is either linear, logarithmic, or both is preferred in order to be compatible with several types of image signal processing systems (column 1, lines 33-37). Therefore, it would have been obvious to one of ordinary skill in the art to modify the primary device to include the use of a gradation function having an input/output relationship that is either linear, logarithmic, or both so as to provide an output image that is compatible with different types of image signal processing systems, as suggested by Kim.

55. In regard to claim 57, note McCarthy discloses that the recording device is configured to record a first-order coefficient of a linear relationship in the same file as the converted image data, to record a base, a first-order coefficient, and a zero-order coefficient of a logarithmic relationship in the same file as the converted image data, or both (column 6, lines 26-36 and column 7, lines 30-63; dependent on particular application, the recorded information is varied). The Examiner also notes that the

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phase "configured to" is considered to be intended use, and as such, broadens the scope of the claim. If a limitation is written with "configured to..." language, a reference is deemed to meet that limitation if the reference discusses the same element that, although not actually performing the claimed function, is structurally capable of performing it.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US005455621A: note the use of a wide dynamic range camera.

US005528339A: note the use of gradation correction for image output.

US006160532A: note the use of gamma correction for image output.

US006163389A: note the use of gradation correction for image output.

US006825884B1: note the use of a normal mode and a wide dynamic range mode.

US005929908A: note the use of recording both the normal and wide dynamic range images in the wide mode.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (571) 272-7323. The examiner can normally be reached on M-F: 8 - 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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